

## Imaging

### HOW ACCURATE ARE 3D-ECHO MEASUREMENTS? COMPARISON OF IN-VIVO MEASUREMENT OF PROSTHETIC VALVE SEWING RING DIAMETER TO KNOWN PROSTHESIS SIZE

ACC Moderated Poster Contributions  
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**Background:** We evaluated the accuracy of real-time 3D-TEE (RT3DTEE) by measuring mitral (MV) and aortic (AV) prosthetic sewing ring diameter and comparing to known prosthesis size. We also compared RT3DTEE accuracy to standard 2DTEE.

**Methods:** RT3DTEE and 2DTEE were performed simultaneously in 30 consecutive patients with prosthesis size known from the operative report. RT3DTEE images were analyzed using MVQ (Philips, Andover MA) to measure the prosthetic ring diameter in the AP axis. 2DTEE images were analyzed using Xcelera (Philips) to measure the ring diameter from the mid-esophageal 3-chamber view.

**Results:** Patients were  $64 \pm 14$  years and 52% female. There were 16 with MV and 14 with AV prostheses. RT3DTEE under-estimated MV prosthesis diameter by  $1.8 \pm 1.8$  mm ( $p=0.002$ ), whereas AV prosthesis diameters were not biased toward over or under-measurement ( $-0.2 \pm 2.3$  mm,  $p=0.8$ ), Figure. 2DTEE measurements were not biased toward over or under-measurement for both MV ( $-0.7 \pm 2.1$  mm,  $p=0.2$ ) and AV ( $-0.2 \pm 1.8$  mm,  $p=0.7$ ).

**Conclusions:** RT3DTEE measurements generally estimated prosthetic ring diameter within 2mm of the actual size. Measurements in the mitral position may be prone to consistent under-estimation of true size. Accuracy of 2DTEE measurements were similar to RT3DTEE.

